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ECONOMIC PROBLEMS OF MILITARY MOBILIZATION

PLANNING MILITARY REQUIREMENTS

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Nowadays military needs are given as a reason for doing, and for not doing, numerous and diverse things. Hence, some definition of the title of this paper is required. Foreign economic aid, balance-of-payments problems, economic control measures, raw material problems, and difficulties over the provision of ships and shoes and sealing wax can usually be directly related to the rearmament program. The efforts of this paper, however, will be directed to an exposition and discussion of the foundational aspects of all requirements which are either directly or indirectly "military." These aspects fall, in their initial phases, almost entirely within the province of the U. S. Department of Defense and the defense ministries of allied countries. Furthermore, these aspects are matters depending materially on judgments which are in great part military and which require some component of professional appraisal by officials, uniformed and civilian, knowledgeable in military matters.

The area of dependence on judgment alone is being continually reduced. Methods of scientific analysis of military problems are being improved. Electronic machines are being applied to the appraisal of military needs. Such improvements give greater precision and increased speed and accuracy to the estimates of the hundreds of thousands of items which, to procurement and production experts, constitute military requirements. But, if only because the potential aggressor is definitely nonco-operative toward any reduction of the requirements problem to exact scientific definitions, the element of military judgment will always bulk large in the requirements equation.

Requirements are only one of the four main military elements in our security situation. The other three are, in my opinion, enemy military capabilities, our strategic plan for defense, and our own military capabilities. Each of these four elements is a function of the other three and no one of them should be considered except in the perspective of the other three.

Military requirements are, in brief, the means estimated as needed

to accomplish the military task at hand—whether that task be destruction of an enemy machine gun emplacement or assurance of security of a nation against aggression. We think today principally in terms of the present security problem and of the present military requirements of the United States and our NATO allies. Hence a definition stated by General Gruenther, General Eisenhower's Chief of Staff, is particularly applicable: "The ground forces, the air forces, and the naval forces, needed to defend against an enemy aggression—these are what we call military requirements."

This is obviously a definition with words tempered to apply to the current situation of no peace-no global war. While the word "defense" is the customary one to use, its broad military meaning may sometimes be overlooked. An adequate defense includes a requirement for means to strike back successfully at an aggressor.

The basic military requirements defined above are normally expressed in terms of divisions by types, air wings by types, and naval combatant ships by types. These are the cutting edges against aggression. Any other item called a military requirement can generally be classified as a variation of these basic fighting units, or as being derived from the requirements therefor—whether we speak of tanks, planes, training camps, military hospitals, landing craft, or sewing kits. It must be recognized that the support requirements to make an atomic bomber wing effective represent a considerable magnitude to include under the generalities just stated.

There are, in my opinion, at least three ways in which military requirements can be stated. These are: (1) By major military force requirements as defined above. (2) In terms of items human, constructed, and manufactured required to provide and support the fighting units. (3) In terms in which the body politic and the national economy provide the means—men, money, machine tools, raw materials, and facilities.

It is of course apparent that the second method of stating requirements is dependent upon and derived from the first method, even as the third method is dependent on the results of the second. General Gruenther's primary concern over requirements is that sufficient fighting units exist to meet a possible aggression. The planner of manpower replacements, the procurement officer, and the supply services must work in terms of specific numbers of particularly qualified personnel and of tangible items for production. The defense production agencies are primarily concerned with provision of elements mentioned in the third definition, with Congress and the taxpayer particularly interested in the money measure of requirements. But the objective of the entire complicated process is substantially expressed in the few words of General Gruenther's definition.

As an estimate of military requirements is an estimate of what is needed to meet a potential aggression, the first step of the appraisal is the preparation of an estimate of the potential aggressor's military capabilities. No particular military judgment is needed to recognize that an aggressor has a great advantage both as to time and place. Within limits, he can choose where to strike and when to strike. Both the Nazis and the Japanese demonstrated in World War II the reduction in military requirements given by this advantage. The Nazis conquered most of Europe west of Russia, using a strategy of timing and concentration of forces which made the military cost low. The Japanese took all of the rimland and off-lying islands of Eastern Asia in less than six months, using relatively limited military resources. When a potential aggressor is estimated to possess the initiative, in case of hostilities, in many vital areas, our own military requirements expand.

This paper will return repeatedly to different aspects of the time element as related to estimating requirements. The estimate of aggressor capabilities must consider the time-phased build-up of potential enemy military strength (before and after a D-day) in case of hostilities without warning and in case of a build-up prior to hostilities. Considerable sympathy should be extended to the anonymous experts who labor on intelligence estimates of another nation's military capabilities time-phased over the next several years. Not only does the potential aggressor have the initiative but he also has the intelligence advantage of access to the *Congressional Record* and to the reports of the U.S. press—a very effective machinery for gathering information about our own capabilities and those of our allies.

The only sound policy is to estimate our own requirements to meet the worst situation likely to occur. The estimate of potential aggressor capabilities, together with a broad estimate of our own capabilities which exist or might be created, is the basis for developing a broad outline plan for defense. This outline plan must, of course, take general account of political and economic, as well as military, realities. Since these realities have changed very definitely during the last ten, and even three, years, it is reasonable to suppose there will be continuing evolution in the future. The concept of this plan could theoretically be anything from nonresistance through isolationism to preventive war. The practical limitations and the actual military policies in existence today are the subject of numerous books, articles, and public pronouncements—and not the subject of this paper.

The first, and most critical, step in estimating requirements is the conversion of the generalities of the outline plan into divisions, air wings, and combatant ships related to specific locations and specific dates after a D-day. Obviously the planner is not able to move directly

from broad generalities to a tabulation of force requirements. One of the intermediate steps is a careful analysis of the many tasks to be undertaken. While we are not here drawing a war plan, it may be useful to list and comment on some of the typical categories of tasks:

1. Hold and protect vital areas initially. This task requires forces on the spot, equipped and trained to D-day battle readiness.

2. Reinforce vital areas in phase (or preferably ahead of) enemy build-up capabilities. Here enter difficult calculations and judgments concerning aggressor mobilization and movement capabilities and similar means we must provide.

3. Hold and maintain the lines of communications—sea, air, and land. The requirements for this task are, in part, a function of the forces and supplies planned to move over the lines of communication. These requirements may appear in very variegated forms. For instance, the strategic bomber missions of World War II against industrial facilities manufacturing components of submarines were directed toward holding the sea line of communications.

4. Carry the attack to the enemy. Obviously any plan which envisaged a continual defensive is tantamount to envisaging defeat.

A little reflection on the above four sample categories of tasks will give emphasis to the importance of the time-space-mass relationship in requirements planning. If adequate forces are not combat-ready in the right location when hostilities break, the initial reverses may gravely dilute the usefulness of other forces programmed for a build-up of military power to overmatch the opponent's build-up. On the other hand, programing of all military power in the "show-window" provides nothing to match the opponent's mobilization. The area of probable employment of forces is a particularly important determinate in U.S. requirements planning. Climate and terrain influence training, organization, support arrangements, and equipment. The time needed to move combat units and supplies is a determining element of requirements for these items. The time element is also, within limits, determined by the standards, such as combat readiness, and transportation arrangements to which requirements are planned; e.g., it is theoretically possible to prepare to transport and support large combat units by air—but very costly.

The way of analysis outlined thus far is a new way of thought to America and certainly not a palatable one. Such military requirements planning as the U.S. undertook prior to ten or twelve years ago was not closely keyed to any specific threat or to any over-all operational war plan. One student of U.S. military policy pre-World War II has remarked sourly that it included four planks—none of them formulated or admitted: (a) fight our wars overseas; (b) depend on allies to sus-

tain the first blows; (c) unpreparedness; (d) (derived from the first three) long wars with costly reverses at the beginning. The changed conditions, resulting from a continual possibility of aggression and weakened allies, place the U.S. in a position where plans must be closely related to specific situations and must be operational rather than broad generalities. The planning is further complicated by the complexities inherent in alliances. The combined U.N. force in Korea and the balanced collective defense program of the North Atlantic Treaty Organization provide essential increments of military posture. But the added elements of strength are more than matched by the added headaches of the planners.

The U.S. people, without any background or orientation in the type of planning now required, are asked to provide tens of billions a year in peacetime to support the conclusions of that planning. Yet there is little hope of effective action to provide detailed public information concerning the estimation of requirements. And perhaps an attempt to do so would principally serve to give aid and comfort to a potential aggressor. An alternative of dependence on a high degree of faith and trust in the professionals in the business is a course of action fraught with political difficulties in the long run, since public ignorance is almost certain to produce periods of political irresponsibility. There is needed a general understanding of the complete process of developing requirements and the remainder of this paper is an attempt to outline that process.

The next step, after determination of requirements for major combatant units, is the development of requirements for combat support, for logistical, administrative, and training units, and for installations. These must be time-phased in consonance with the program for mobilization, movement, and commitment to battle of combatant units. The readiness status of these supporting units and installations will vary all the way from some on a D-day status to some that are only paper plans. There are some short cuts for rough estimates. No one has ever seen a "division slice" on a troop list. But it includes the division and a proportionate allocation thereto of all the supporting forces in a theater of operations. In World War II experience it varied roughly between two and three times the strength of the division itself. Such an approximation is complicated by the partially unified support of both army and air units. General Bradley has commented, in one of his speeches, that every increase of 100,000 men in the Air Force requires an increase of 15,000 men in the Army to provide those types of support which the Army gives to both its own and air units.

The continuous operation of naval units over long periods of time is only possible if basing and resupply facilities are near the opera-

tional area. Support must be available in the form of advance land bases or floating bases or both.

The lines of communication, ships, port facilities, air bases, and other components thereof are an area where military requirements merge with the needs of peacetime civilian commerce and movement. For example, the roads built by the Romans served both types of requirements. So also do the present-day merchant ships of NATO countries and the air bases on the transoceanic routes. The lines of communication are one of the most vital elements in making U.S. military strength effective as a deterrent to aggression and, if war comes, against an enemy.

Impatience has been publicly expressed over the appreciable proportion of armed forces personnel in other than combat units. The foregoing paragraphs indicate some of the reasons. Perhaps the greatest single requirement for such personnel is in the training, supply, maintenance, and administrative establishments within the U.S. An expansion of armed forces, such as we are now undertaking, means more training stations, enlarged naval bases, more airfields, more depots, and more forces to man all of them. These force requirements can be roughly divided into the flow of trainees required to keep military units up to strength and the static personnel needed to operate the facilities and conduct the administration. This latter group, while constituting military requirements for personnel, can have a large civilian component. For instance, there are approximately 1,274,000 civilian employees of the U.S. Department of Defense. A proportion of these should be charged to manpower requirements incident to military production since they are working in arsenals or the equivalent.

There should be special stress on the importance of fixed installations to support the armed forces. The NATO technical vocabulary calls these "infrastructure," a new military term still generating some differences of opinion over its meaning. The fixed installations are a part of one of the more difficult "circular problems" in requirements planning. The barracks and training areas, air and naval bases, supply depots, signal communications, port facilities, hospitals, and transportation networks are essential to making the combat forces effective. But they consume enormous resources, including men to operate them; thereby creating more requirements. As a typical and simple example, the decision that force requirements demand mobilization of an additional division, in case of hostilities, may mean increased production to stockpile the equipment, construction of depot space for the equipment, and inducting or hiring more manpower to care for the equipment and issue it in case of emergency.

Planning of fixed installations must extend to those which have to

be provided in case of hostilities and the plan must be time-phased to conform to needs created by the planned force build-up. Thus a basis is provided for estimating equipment, military units (such as engineer construction battalions), supplies, and transportation needed to provide the fixed installations. As an example of the magnitude of this type of problem, the major military effort of the U.S. in the U.K. during our first year and a half in World War II was a base building and base-stocking operation to support the great air and cross-channel attacks on Germany which followed.

Thus far this paper has discussed requirements primarily in terms of operating units and installations. Such definitions are comprehensible and manageable to the military commander. The next step in requirement planning is to convert the operating units and installations to terms of items which can be priced and procured (and, for manpower, enlisted or inducted). This stage of planning requires an estimate of both initial cost and continuing maintenance.

Here the problems of standards, including reserves and consumption rates, must be incorporated into the requirements equation. Probably the single most important standard is that of degree of combat-readiness of units. A unit on a D-day basis must be manned, trained, equipped, have transportation ready to move to the probable battle area, protection for its probable line of communications, personnel replacements ready to replace casualties, supplies ready to fill the pipe line behind it wherever it goes into battle, and ready supporting troops. A unit estimated as required 180 days after the decision to commit it to operations can be maintained on much lower standards. A unit estimated as required not before a year or more after a D-day can be partially a paper unit—provided officers, trained specialists, necessary fixed installations for training, and equipment are available on a D-day basis—and reserves and/or production and other support items are ready to maintain it once it is committed to battle. The nature of the threat against which military requirements are currently planned forces emphasis on readiness. There might not be time for the ponderous mobilization of manpower and industry made traditional by our experience in World Wars I and II. Standards of training, which are included in the category of readiness standards, determine the time that individuals and units have to be maintained before entering the combat-ready category. Requirements for training installations, training equipment, and manpower are affected. These standards must include decisions as to the degree of versatility proposed for each unit—versatility both as to climate and terrain and as to mission in the complex armed forces team. Training reduces casualties and

makes equipment and manpower more effective, but is costly in resources, money, and personal service.

The standards of equipment are a matter for the most professional military judgment. The appraisal, as in training, must determine the degree of versatility to be provided in the form of equipment. Continual decisions are required on the question of shifts to more modern types. At any time during the past seven years the judgments as to whether available World War II resources are or are not adequately modern to satisfy requirements have been judgments measured in terms of many billion dollars. The levels of equipment (number of planes per wing, tanks per division, etc.), both weapons and non-combat items such as trucks, are far from absolutes. There are standards which can be called "minimum" and those which can be called "optimum," but they are all a product of judgment based on experience and analysis.

Obviously the levels of equipment are a major factor in determining the requirements for supporting units and installations to maintain the equipment and provide supplies therefor. This brings the discussion toward a consideration of consumption and attrition rates. But first a comment on standards of support for units and particularly individuals in the armed services.

A combat unit must be supported by adequate maintenance, supply, and transportation arrangements or it will soon lose effectiveness. The United States also includes in military requirements an efficient set of arrangements to care for the individual from induction to separation from the service by death, discharge, or retirement. These arrangements include a pay scale comparing not too unfavorably with incomes in civilian life, a postal system, recreation facilities, and high standards of food, clothing, and medical care. They include a floor-space per man in barracks, hospital, and ship transport which is above standards of our allies and materially above those of any potential aggressor. The combat support standards include a medical, evacuation, and hospital system which guarantees a high probability of survival if the individual is not instantly killed in battle. If he is killed, a graves registration and related administrative system inform his next of kin and care for his mortal remains. Such standards, when precisely stated, can be translated into manpower, equipment, construction, and other resources and priced in money terms. That the resulting requirements are higher than corresponding ones of other nations is to be expected. The U.S. standards of living and of consideration for the individual are reflected in our military requirements.

Any single category of requirements tends to breed other categories.

Perhaps the best example is the standard of motor transport which influences requirements for maintenance units, road transportation, and hence engineer units, fuel delivery units, fuel storage capacity, tankers, and a complicated supply system to provide spare parts and replace whole vehicles.

Military experience provides guidance as to the consumption rates in peace and in war of supplies and equipment. The amount a man will eat per day can be defined quite precisely. The number of pairs of socks he will wear out per year is a somewhat less precise matter, since the individual's standards of discipline as to changing and washing the socks are an element. The assortment of socks, for a large number of men by sizes, is readily determined from experience—which may mislead for a small number. The peacetime standards of training (e.g., flying hours required per pilot, thereby establishing maintenance and aviation fuel needs) are the main determining factors for some items of requirements. In general, peacetime needs to support a particular force, whether for spare parts, whole items of equipment, food, clothing, maintenance of buildings, or any other item, can be estimated closely on the basis of experience. Two areas, however, where judgment must be particularly applied are the replacement of existent equipment by improved types (the requirements for research and development are a part of this problem area) and the war reserves to be provided.

War reserves can be classified roughly into two categories: those needed for equipment and initial support of new units in case an emergency necessitates mobilization and those for support of operations in case of hostilities. Perhaps there should be a third category which takes account of requirements of allies, which these allies are unlikely to be able to provide, in case of war. Standards for the first category can be readily defined and take account of such aspects as partial equipment during training periods immediately after mobilization and increased consumption by all units due to an increased training tempo. Standards and consumption rates applicable to the progressive commitment of forces to operations are based on experience in the past and the best available analysis of changes in equipment and ways of war. But a judgment based on World War II experience may prove somewhat wide of the mark—witness the unprecedented consumption of equipment in Korea. It is probably true that more faith can be put in planning rates of combat maintenance and attrition when applied to a large force than when applied to a smaller force such as a single army, air force, or fleet task force. Rates based on experience still require difficult judgments. As an example, should war reserves

for jet fighters be based on U.S. experience with fighters in World War II? Or on British experience in the Battle of Britain? Or on Korean experience? On what basis should losses of ships and equipment in their cargo to submarines be calculated?

The war reserves must include an increment to fill the pipe line of supply to forces planned for initial commitment to operations. The United States was fortunate in having supplies stored in Japan which provided much of the support for Korean operations while the pipe line from home was being filled. The transoceanic pipe line, using ship and rail transportation, contains the equivalent of several months' supplies. Air transport can carry some special critical items but is still inconsequential measured in tonnage.

The foregoing discussion of mobilization and war reserves may have created a mental picture of a military requirement for townships covered with supply depots filled with supplies, such as socks, which the U.S. civilian economy needs, and expensive equipment growing more obsolescent every year that the U.S. policy of peace through strength continues to be successful. The mental picture would be approximately correct if the U.S. followed its traditional pattern of industrial unpreparedness and depended entirely on stored reserves to bridge the two to three years needed after an M-day to get military production under way. It is, of course, true that there is, in privately-owned inventories and production under way, a *de facto* available reserve of items used in common with the civilian economy; e.g., food and petroleum products. These are, in most cases, short lead time items and hence not critical in mobilization and support of operations.

The new U.S. national policy, in step with the requirements for combat readiness, is to depend for reserves on a combination of supplies in depots and an industrial mobilization base of ready production lines. The resulting reduction in requirements for equipment and supplies is associated with a requirement for developing and maintaining the mobilization base. This development is incidental to the rearmament program but is planned with an eye to the long-term future. The maintenance will be a continuing considerable requirement on the U.S. taxpayer. The policy avoids the necessity for providing huge, and probably impracticable, quantities of supplies for storage. It partially avoids the problem posed by obsolescence and changing ways of war. It incurs the political hazard that Congress may some year fail to provide for the continuing requirement of maintaining production lines. The policy presents a very important field for judgments. On an item-by-item basis, it is necessary to define requirements for capacity and state of readiness of production lines and quantity of supplies to be

stored in reserve, so that the combined capability will provide the time-phased requirements for support of an increasing commitment of forces to operations in case war comes.

Nomenclature, standardization, and the pooling of reserves are among the factors to be considered in requirements planning. They will be mentioned here only in broad outline to show that they influence the problem. Certainly each of the several hundred thousand items which make up military requirements, from the procurement and production standpoint, should be known to every service and agency by the same name and same description. The achievement of this objective is a part of a program of standardization and is not easy. A program of standardization is one necessitating many difficult judgments. It means some abandonment of specialized standards and, if pressed too rapidly, some increase in military requirements, since replacement for those items judged nonstandard must be included in estimates. The advantages of standardization include a reduction in requirements for reserves. For example, to use an absurd hypothesis to make the point, if each rifleman in the U.S. Army had a rifle different from every other rifleman, there would then be a theoretical requirement to hold at least one rifle in reserve behind each rifle in use. The ammunition and spare parts problems would be similar—and fantastic. When all rifles are standardized, reserves can be pooled and the probability being nil that every man will need a new rifle before production turns out more of them, the size of the reserve and for that matter, the supply depots, pipe line, and units handling supplies can be greatly reduced. The way of analysis, indicated in the previous few sentences, is particularly applicable to the problems of the smaller countries in the NATO and, to a lesser extent, the entire NATO.

The foregoing discussion has attempted to set forth, in the first part, a description of the strategic and high-policy determinations underlying military requirements. This description has been followed by a discussion of the more detailed policies and determinations (supporting forces and installations, standards including reserves, rates of consumption and attrition) on which the item-by-item computation of military requirements depends. This computation, which involves a considerable part of the administrative organization of the Department of Defense and the armed services, is a gigantic task. The time cycle of detailed requirements planning for peacetime is, of course, the budget year, but planning must start more than a year ahead of the budget submission. The time cycle for computing requirements for mobilization is longer. The situation is continually dynamic with changes in policies generating changes in needs. The working individuals are continually striving to solve, on an item-by-item basis,

the equation: Total requirements (time-phased) minus assets programmed to be on hand (time-phased) equals net requirements (time-phased). The solution to the equation sets production, budgetary, and procurement targets. The day may come when the multitude of factors involved can be locked up in an electronic device which then produces the arithmetical answers in response to pushing a button. It is unlikely, however, that any machine will ever be able to make the foundational planning judgments.

The next step, following determination of requirements on a time-phased item-by-item basis, is the breakdown of these items into the basic components from the production standpoint. It has been previously suggested that a useful categorization is (time-phased) by manpower (both uniformed and civilian), raw materials, machine tools, manufacturing facilities, and money. The latter is probably the most difficult to estimate in an expanding military situation when experience is limited or lacking in production of many items and lead times may be three or more years in length. Improved techniques may materially reduce original estimates. Shifting costs of production components over the long lead time period may cause major revisions of money estimates.

In addition to the difficulties in estimating money values, there are certain other problems which stand out as continual headaches for the requirements planner. These include consumption rates—particularly battle rates—and levels of reserves. Time-phasing of requirements and the related problem of balance among equipment, manpower, installations and force requirements are vital problems. The lower echelon estimating agencies probably have a natural tendency toward overinsurance. As an example, one agency recently presented the Secretary of Defense with a “requirement” for over a million gas masks. The programmed manpower strength was less than a third of a million. There is also the hazard of underinsurance due to failure to foresee some need, or due to budgetary and other pressures on reviewing authorities to keep demands down, or because of some other reason. Perhaps some aspects of the armed forces “economy” program, just prior to the outbreak in Korea, could be placed in the underinsurance category—particularly the understrength of divisions in Japan. One of the major technical difficulties lies in the almost certain shifts of strategic plans.

We can well ask concerning the order of accuracy of estimates of military requirements. The only certain test lies in trial by global war—and that test is one we should not have to make—if we plan and provide defensive power wisely. Over-all requirements in divisions, air wings, and ships are orders of magnitude. But Congress and the parliaments of our allies do not authorize mobilization and appropriate

funds for "orders of magnitude." They deal in specifics. These specifics, because of the complicated problem of balancing forces and because over-all requirements are always a summation of the requirements for several military tasks, usually give totals of divisions and air wings which add up to two or three digit figures plus a fraction. There is unlikely to be a stated requirement for a fraction of a ship. Probably few military planners will assert that one or two ships, planes, or divisions, less or more, will certainly mean the difference between peace or war, survival or extinction. Parenthetically, the provision of army divisions in World War II is probably the most successful adjustment of estimated over-all requirements to actual needs. Of the eighty-nine formed, all went overseas, eighty-seven were committed to battle, one was the garrison of Hawaii, and the eighty-ninth was in reserve in Europe.

When we start the difficult process of applying military judgment and military experience to determining the supporting forces and installations, the equipment and supplies, needed, the results are certainly not subject to audit by a certified public accountant. Estimates must sometimes be made on the basis of little or no experience with the items concerned. Consumption rates may turn out, in fact, to vary widely from previous experience. For instance, our consumption of artillery ammunition in Korea was several times our experience in World War II and our loss rate of fighter planes was undoubtedly less than planning estimates.

It is reasonable that requirements, estimated by the service or agency concerned, will usually be adequate. But this operation is not comparable to preparing for an athletic contest or even estimating for the launching of a large business enterprise. The price of underestimation may be high. It may be national extinction.

The only answer to the problem of guiding and reviewing requirements estimates lies in staff work of the most professional type. Guidelines such as standards and maintenance rates must be continually analyzed. And estimates must be, and are, reviewed and co-ordinated by one or more echelons above the interested estimating agency.

Thus far, this discussion has been entirely about requirements, which are the subject of the paper. The pay-off comes in the availability of resources to meet the estimate of requirements. If our country or our coalition cannot provide, what happens? The first point is that there is no such planning operation as a reduction in requirements—short of a shift in the strategic situation. If the estimates, on review, can be reasonably diminished, then the original planning was not accurately done. The following measures are offered for consideration in this difficult area of analysis which the North Atlantic Council

described in substance as: Resolving the issues arising from military requirements for an adequate defense, in relation to realistic politico-economic capabilities, (a) extend the time-period for provision of the requirements; (b) accept a "calculated risk" by failing to provide those requirements estimated to be least vital; (c) adjust the strategic concept and strategic plan so that capabilities and requirements approach a balance; (d) combinations of the foregoing; (e) in the case of the U.S. and perhaps some of our allies it is possible to find savings by adopting more austere standards for some elements of military requirements. Finally, loss or crippling of manpower can still be substituted for equipment and technology to a certain extent—if the nation concerned is willing to pay the price for that type of war. Before leaving this part of the discussion subject, I stress the reluctance with which the phrase "calculated risk" is here used. The calculation part is rarely very accurate—even when based on the best military judgment. The risk part is the risk of diluting the deterrent effect of our entire military effort, or loss of lives and defeats if war comes, of possible national disaster.

Shifts in Military Requirements. Referring back to the four main elements of our security situation, mentioned early in this discussion (enemy capabilities, the strategic plan, our own capabilities, and requirements) the shifting relationship is bound to create shifts in estimates of requirements. The following list gives a few specifics which may cause appreciable changes:

1. Degree of mobilization of a potential enemy.
2. Location and capabilities of a possible aggressor's allies.
3. Capabilities (military, economic, and political) and location of our own allies. It is conceivable that increased strength through allies brings potential increase in military requirements rather than decreases.
4. Changes in military techniques—atomic weapons being the obvious, and favorite, example.
5. Shifts among types of forces because of changes in techniques, allies, for economy of force, or other reasons.
6. Changes in strategic plan, by which any one of the causes mentioned above should be reflected, preliminary to review and recomputation of requirements. The judgments and shifts in general statements of military strategy can be made in a relatively short time. The consequent shifts in detailed requirements and in such related operations as training, organization, procurement and production are time-consuming and complicated.

There is necessarily a considerable degree of rigidity in military requirements planning. The reasons include the multitude of planning

factors which must be used in the actual computation, the time required for the process of detailed computation, and the complicated chain reaction from a shift in over-all requirements. This chain reaction extends through procurement and production arrangements, construction, training and personnel programs, to the civilian economy.

There is probably some rigidity, in every country, due to prejudice, tradition, and vested interests in certain military requirements. Two examples can perhaps be mentioned without arousing undue antipathy in the reader. In hindsight, we probably retained sea coast artillery and horse cavalry longer than really required. There are major psychological and political elements influencing popular and legislative judgments as to what things are, or are not, military requirements. These elements may be more important pressures than the entrenched attitude of the military agency affected.

Obviously there needs to be a middle ground between rigidity in military requirements planning and rapid changes which bring confusion, delay, and perhaps mistakes requiring reversals of decisions.

With some trepidation, I give here my personal view that the changing world situation and possible changes in means of defense dictate a considerable degree of flexibility. Because of the realities of budgets, legislation, and production, there can be little flexibility during 1952. The initiated actions toward currently estimated requirements targets cannot be changed much in the short term without delay and even loss of military power. But while actions must be initiated two, three, or more years in advance for provision of many long-lead time items of military requirements, practical adjustment can be made to meet changes in these requirements. Our best talent should be concentrated on efforts to appraise these changes with sufficient certainty to justify timely adjustment in requirements and in the measures taken to fulfill them.

My closing remark is generated by an old army saying: "He who wills the task must will the means." It was directed, of course, as a caution to commanders who might give orders which could not be carried out. Our security strategy today is dictated in considerable part by political actions: through acts of Congress, through our foreign policy, through public opinion. (I recognize these political actions are based in varying degrees on interpretations of the military situation.) It is well to remember that these policies, while usually stated as generalities, are seen by the planner of military requirements in terms of divisions, air wings, combat ships, military appropriations, and personal service of U. S. citizens.